

Daftar Pustaka

1. Krobotova LN. Hyperpigmentation: types, diagnostics, and targeted treatment options. *Journal of The European Academy of Dermatology and Venereology*. 2013;27(1):1-4.
2. Suryaningsih BE. Melanogenesis and its associated signalings. *Bali Medical Journal*. 2020;9(1):327-331.
3. Lee SY, Baek N, Nam TG. Natural, semisynthetic and synthetic tyrosinase inhibitors. *Journal of Enzyme Inhibition and Medicinal Chemistry*. 2016;31(1):1-13.
4. Runger TM. Cutaneous photobiology. In: Kang S, Amagai M, Bruckner Anna I, Erik AH, David J margolis, Michael AJM, et al., editors. *Fitzpatrick's dermatology in general medicine*. 9th ed. New York: McGraw-Hill;2019.265-285.
5. Mir MM, Jalali S. Prevalence of skin disease. *International Journal of Advances in Medical Sciences*. 2018;3(10):1-11.
6. Adil M, Amin SS, Arif T, Dorjay K, Raj D, Bansal R. Hyperpigmented skin conditions: A study of pattern and prevalence from a tertiary care hospital of north india. *International Journal of Current Advanced Research*. 2017;6(4):3562-3565.
7. Asditya A, Sukanto H. Studi Retrospektif: Profil pasien melasma. *Berkala Ilmu Kesehatan Kulit dan Kelamin*. 2017;29(3):220-228.
8. Salim YF, Yenny SW, Lestari S. Insiden melasma Di Poliklinik Kulit dan Kelamin RSUP Dr. M. Djamil Padang Tahun 2012-2015. *Jurnal Kedokteran Andalas*. 2018;7:71-73.
9. Yadav A, Garg T, Mandal AK, Chander R. Quality of life in patients with acquired pigmentation: an observational study. *Journal of Cosmetic Dermatology*. 2018;17(6):1-2.
10. Praharsini I, Suryawati N, Dewi H. Skor kualitas hidup dermatologi berkorelasi positif dengan melasma area and severity index. *Intisari Sains Medis*. 2017;8(3):189-192.
11. Sarkar R, Chugh S, Garg VK. Newer and upcoming therapies for melasma. *Indian Journal of Dermatlogy Leprosy*. 2012;78(4):417-28.
12. Sarkar R, Arora P, Garg KV. Cosmeceuticals for hyperpigmentation: What is available ?. *Journal of Cutaneous Aesthetic Surgery*. 2013;6(1):4-12.
13. Draelos ZD. The art and science of new advances in cosmeceuticals. *Clinical Plastic Surgery*. 2011;38:397-407.
14. Monteiro RC, Kishore BN, Bhat RM, Sukumar D, Martis J, Ganesh HK. Acomparative study of the efficacy of 4% hydroquinone versus 0,75% kojic acid cream in the treatment of facial melasma. *Indian Journal of Dermatology*. 2013;58(2):157-160.
15. Adalatkah H, Bazargani HS. The first clinical experience on efficacy of topical flutamide on melasma compared with topical hydroquinone: a randomized clinical trial. 2015;9:4219-4225.
16. Puspitasari P, Wiraguna AAGP, Pangkahila W. Krim ekstrak teh hijau 20% (*Camellia sinensis*) mencegah peningkatan jumlah melanin sama efektif dengan krim hidrokuinon 4% pada kulit marmot (*Cavia porcellus*) yang dipajan sinar ultraviolet B. *Journal of Biomedic*. 2017;4(2):101-6.

17. Charissa M, Djajadisastra J, Elya B. Uji aktivitas antioksidan dan penghambatan tirosinase serta uji manfaat gel ekstrak kulit batang taya (*Naucllea subdita*) terhadap kulit. *Jurnal Kedokteran Indonesia*. 2017;6(2):98–107.
18. Kaur H, Nagpal M, Aggarwal G. Journal of drug delivery and therapeutics potential benefits of phytochemicals for treatment of hyperpigmentation. *Journal of Drug Delivery Therapy*. 2019;9(2):420–7.
19. Marpaung AM. Tinjauan manfaat bunga telang (*Clitoria ternatea L.*) bagi kesehatan manusia. *Journal of Functional Food and Nutraceutical*. 2020 Feb;1(2):47-69.
20. Andriani D, Murtisiwi L. Penetapan kadar fenolik total ekstrak etanol bunga telang (*Clitoria ternatea L.*) dengan spektrofotometri UV-VIS. *Cendekia Journal of Pharmacy*. 2018;2(1):32-38.
21. Cahyaningsih E, Sandhi PE, Santoso P. Skrining fitokimia dan uji antioksidan ekstrak etanol bunga telang (*Clitoria Ternatea L*) dengan metode spektrofotometri UV-VIS. *Jurnal Ilmiah Medicamento*. 2019;5(1):51–57.
22. Abidin Z, Khaeriah U, Zuhriana, Pratama M, Baits M. Penentuan aktivitas penghambat tirosinase dari ekstrak kasar dan ekstrak terpurifikasi daun kelor (*Moringa oleifera L.*). *Indonesia Journal of Pharmaceutical Science and Technology*. 2019;1(1):52–58.
23. Sagala Z, Pratiwi RW, Azmi NU. Uji aktivitas inhibisi terhadap enzim tirosinase dari ekstrak etanol daun pepaya (*Carica papaya L.*) secara in vitro. *Jurnal Penelitian Farmasi Indonesia*. 2015;105(3):129–133.
24. Lu H, Yang K, Zhan L, Lu T, Chen X, Cai X, et al. Optimization of flavonoid extraction in dendrobium officinale leaves and their inhibitory effects on tyrosinase activity. *International Journal of Analytical Chemistry*. 2019;6:1-10.
25. Burger P, Landreau A, Azoulay S, Michel T, Fernandez X. Skin whitening cosmetics: Feedback and challenges in the development of natural skin lighteners cosmetics. 2016;3(4):36.
26. Risa A. Pengaruh pemberian ekstrak bunga telang (*Clitoria ternatea L.*) terhadap ekspresi gen enzim tirosinase pada cell line mouse melanoma b16f10. Universitas Andalas, Padang. 2021.
27. Herlianez J. Pengaruh pemberian ekstrak katekin gambir (*Uncaria gambir Roxburgh.*) terhadap jumlah melanin pada kulit marmot yang terpapar sinar ultraviolet B. Universitas Andalas, Padang. 2021.
28. Magdalena AB, Bardi S, Indriyanti W, Maelaningsih FS. Formulasi krim antihiperpigmentasi ekstrak Kulit buah delima (*Punica granatum L.*). *International Journal of Pharmaceutical*. 2016;1(3):1-9.
29. Indrayani KE. Efek antiinflamasi topikal ekstrak etanol bunga telang (*Clitoria ternatea L.*) pada kulit mencit terinduksi karagenin. Universitas Sanata Dharma, Yogyakarta. 2020.
30. Irsyad M. Pengaruh penambahan ekstrak gambir (*Uncaria gambir, Roxb*) terhadap karakteristik skin lotion. Universitas Andalas, Padang. 2019.
31. Hida T, Kamiya T, Kawakami A, Ogino J, Sohma H, et al. Elucidation of melanogenesis cascade for identifying pathophysiology and therapeutic approach of pigmentary disorders and melanoma. 2020;21:1-24.
32. Chang T. Natural melanogenesis inhibitors acting through the down regulation of tyrosinase activity. *Materials (Basel)*. 2012;5:1661–85.

33. D'Mello SAN, Finlay GJ, Baguley BC, Askarian ME. Signaling pathways in melanogenesis. *International Journal of Molecular Science*. 2016;17(7):1–18.
34. Huang HC, Chang SJ, Wu CY, Ke HJ, Chang TM. Shogaol inhibits-MSH-induced melanogenesis through the acceleration of ERK and PI3K/Akt-mediated MITF degradation. *Biomedical Research International*. 2014;2014:4–10.
35. Fu C, Chen J, Lu J, Yi L, Tong X, Kang L, et al. Roles of inflammation factors in melanogenesis. *Molecular Medicine Report*. 2020;21:1421-1430.
36. Pillaiyar T, Namasivayam V, Manickam M, Jung SH. Inhibitors of melanogenesis: An updated review. *Journal of Medicine Chemical*. 2018;61(17):7395-7418.
37. Suhariyanto. *Statistik tanaman buah-buahan dan sayuran tahunan*. Indonesia: Badan Pusat Statistik. 2017.36-37.
38. Ezzudin M, Rabeta MS. A potential of telang tree (*Clitoria ternatea*) in human health. *Food Research*. 2018;2(5):415–420.
39. Purba EC. Kembang telang (*Clitoria ternatea L.*): pemanfaatan dan bioaktivitas. *Journal of Education, Mathematic, and Science*. 2020 Jan;4(2):111-124.
40. Angriani L. Potensi ekstrak bunga telang (*Clitoria ternatea*) sebagai pewarna alami lokal pada berbagai industri pangan. *Journal Food Technology and Nutritions*. 2019;2(1):32-37.
41. Budiasih KS. Prosiding seminar Nasional Kimia UNY 2017 sinergi penelitian dan pembelajaran untuk mendukung pengembangan literasi kimia pada Era Global Ruang Seminar FMIPA UNY. *Jurnal Prosiding*. 2017;4: 201–206.
42. Jamil N, Mohd Zairi MN, Mohd Nasim NA, Pa'ee F. Influences of environmental conditions to phytoconstituents in *Clitoria ternatea* (Butterfly Pea Flower) – A Review. *Journal of Sciences and Technology*. 2018;10(2):208–228.
43. Saadah H, Nurhasanah H. Perbandingan pelarut etanol dan air pada pembuatan ekstrak umbi bawang tiwai (*Eleutherine americana meer*) menggunakan metode maserasi. *Jurnal Ilmiah Manuntung*. 2015;1(2):149-153.
44. Marpaung T. Efektivitas konsentrasi asam sitrat pada ekstraksi pigmen antosianin dari bunga telang (*Clitoria ternatea*) dan aplikasinya pada permen jeli sirsak. Universitas Muhammadiyah, Malang. 2018.
45. Azizan NA. Optimization of solvent ratio, extraction time, and temperator from *Clitoria ternatea L.* petals. Universitas Teknologi Mara. 2021.
46. Panche AN, Diwan AD, Chandra SR. Flavonoids: An overview. *Journal of Nutritional Science*. 2016;5(e47):1-15.
47. Lakshmi CHN, Raju BDP, Madhavi T, Sushma NJ. Identification of bioactive compounds by ftir analysis and in vitro antioxidant activity of *Clitoria ternatea* leaf and flower extracts. *Indo American Journal of Pharmaceutical. Reserach*. 2014;4(9):2231-6876.
48. Chayaratanasin P, Barbieri MA, Suanpairintr N, Adisakwattana S. Inhibitory effect of *Clitoria ternatea* flower petal extract on fructoseinduced protein glycation and oxidation-dependent damages to albumin in vitro. *Biomedicine Complementary and Alternative Medicine*. 2015;15(1):1–9.

49. Singh NK, Garabadu D, Sharma P, Shrivastava SK, Mishra P. Anti-allergy and anti-tusive activity of *Clitoria ternatea* L. in experimental animals. *Journal of Ethno-pharmacology*. 2018;1-42.
50. Suganya G, Sampath Kumar P, Dheepa B, Sivakumar R. In vitro antidiabetic, antioxidant and anti-inflammatory activity of *Clitoria ternatea* L. *International Journal of Pharmacy and Sciences*. 2014;6(7):342–7.
51. Azima S, Noriham A, Manshoor N. Phenolics, antioxidants and color properties of aqueous pigmented plant extracts: *Ardisia colorata* var. *elliptica*, *Clitoria ternatea*, *Garcinia mangostana* and *Syzygium cumini*. *Journal of Functional Foods*. 2017;38:232–241.
52. Zakaria NN, Okello EJ, Howes MJ, Machin MA, Bowman A. In vitro protective effects of an aqueous extract of *Clitoria ternatea* L. flower against hydrogen peroxide-induced cytotoxicity and UV-induced mtDNA damage in human keratinocytes. 2018:1-9.
53. Abidin Z, Khaeriah U, Zuhriana, Pratama M, Baits M. Penentuan aktivitas penghambat tirosinase dari ekstrak kasar dan ekstrak terpurifikasi daun Kelor (*Moringa oleifera* L). *Indonesia Journal of Pharmaceutical Science and Technology*. 2019;1(1):52–58.
54. Hindun S, Rusdiana T, Abdasah M, Hindritiani R. Potensi limbah kulit jeruk nipis (*Citrus auronfilia*) sebagai inhibitor tyrosinase. *Indonesian Journal of Pharmaceutical Science and Technology*. 2017;4(2):64-69.
55. Nur S, Rumiayati R, Lukitaningsih E. Skrining aktivitas antioksidan, antiaging dan penghambatan tirosinase dari ekstrak etanolik dan etil asetat daging buah dan kulit buah Langsung (*Lansium domesticum* corr) secara in vitro. *Traditional Medicine Journal*. 2017;22(1):63.
56. Charissa M, Djajadisastra J, Elya B. Uji aktivitas antioksidan dan penghambatan tirosinase serta uji manfaat gel ekstrak kulit batang Taya (*Nauclea subdita*) terhadap Kulit. *Jurnal Kefarmasian Indonesia*. 2017;6(2):98–107.
57. Chen LH, Chen IC, Chen PY, Huang PH. Application of butterfly pea flower extract in mask development. *Scientia Pharmaceutica*. 2018;86(4):19.
58. Oktaviana M. Pengaruh pemberian katekin gambir (*Uncaria gambir* Roxb.) terhadap ekspresi gen enzim tirosinase pada cell line mouse melanoma b16f10. Universitas Andalas, Padang. 2020.
59. Molina FGA, Uñoz JLM, Arón R V, Ópez JNRO. A review on spectrophotometric methods for measuring the monophenolase and diphenolase activities of tyrosinase. *Journal of Agriculture, Food, and Chemical*. 2007;55:9739-9749.
60. Park J, Chung H, Bang SH, Han AR, Seo EK, Chang SE, et al. Dimethoxyphenylbut-3-en-1-ol enhances melanogenesis through increasing upstream stimulating factor-1-mediated tyrosinase expression. *PLoS ONE*. 2015;10(11): e0141988.
61. Lee TH, Seo JO, Baek SH, Kim SY. Inhibitory effects of resveratrol on melanin synthesis in ultraviolet B-induced pigmentation in guinea pig skin. *Biomolecules and Therapeutics*. 2014;22(1):35–40.
62. Sofiana R, Wiraguna AP, Pangkahila W. Krim ekstrak etanol biji mengkudu (*Morinda citrifolia*) sama efektifnya dengan krim hidrokuinon dalam

- mencegah peningkatan jumlah melanin kulit marmut (*Cavia porcellus*) yang dipapar sinar ultraviolet B. *Journal of e-Biomedik*. 2017;5(1):1–6.
63. Hastiningsih I. Krim ekstrak etanol kulit batang pohon nangka (*Artocarpus heterophilus*) sama efektifnya dengan krim hidrokuinon dalam mencegah peningkatan jumlah melanin pada kulit marmut (*Cavia porcellus*) yang dipaparsinar UVB. Universitas Udayana, Bali; 2015.
64. Azwanida ZN, Jonathan OE, Melanie-Jaynes H. Antioxidant, anticollagenase, antielastase, and antityrosinase activities of an aqueous *Cosmos caudatus* Kunth (Asteraceae) leaf extract. *Tropical Journal of Natural Product Research*. 2020;4:1124–30.
65. Indrisari M, Sartini S, Miskad UA, Djawad K, Tahir KA, Nurkhairi N, et al. Photoprotective and inhibitory activity of tyrosinase in extract and fractions of *Terminalia catappa* L. *Open Access Macedonia Journal Medical Science*. 2021;9:263–270.

